

## **SEQUENCE LISTING**

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<130> N.88280A JCI

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<170> PatentIn version 3.1

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E2203

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cggtcctgag tccgcggact gccatttca ttaagaactg ccacttagag gtacccaaat  
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60

120

180

240

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287

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335

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 Asp Phe Val Glu Ser Glu Phe Phe Leu Ile Asp Gly Asp Ser Leu Leu  
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383

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Ile Thr Cys Ile Cys Glu Ile Ser Phe Lys Pro Gly Gln Asn Leu His  
50 55 60

431

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 Phe Phe Tyr Leu Val Glu Arg Tyr Leu Val Asp Leu Ile Ser Lys Gly  
       65                    70                    75

479

gga caa ttc acc ata gtt ttc aag gat gcc gag tat gcg tat ttc  
Gly Gln Phe Thr Ile Val Phe Phe Lys Asp Ala Glu Tyr Ala Tyr Phe  
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Ala Glu Ser	Val Ser T hr Phe Leu	Lys Lys Ly s Gln Glu	Thr Lys	
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Arg Pro Pro	Lys Ala A sp Lys Glu	Ala His Va l Met Ala	Asn Lys	
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Glu Lys Ser	Gln Lys Lys Thr Arg	Asn Val As p Gln Ser	Leu Ile	
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Asp Thr Glu	Thr Leu Gln Lys Val	Phe Gly Arg Val Lys	Phe Glu	
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Arg Lys Gly	Glu Glu Leu Lys Ala	Leu Ala Gl u Arg Gly	Ile Gly	
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Tyr His His	Ser Ala Met Ser Phe	Lys Glu Lys Gln Leu	Val Glu	
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Ile Leu Phe	Arg Lys Gly Tyr Leu	Arg Val Va l Thr Ala	Thr Gly	
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Thr Leu Ala	Leu Gly Val Asn Met	Pro Cys Ly s Ser Val	Val Phe	
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Ala Gln Asn	Ser Val Tyr Leu Asp	Ala Leu As n Tyr Arg	Gln Met	
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Ser Gly Arg	Ala Gly Arg Arg Gly	Gln Asp Leu Met Gly	Asp Val	
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Tyr Phe Phe	Asp Ile Pro Phe Pro	Lys Ile Gl y Lys Leu	Ile Lys	
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Ser Asn Val	Pro Glu Leu Arg Gly	His Phe Pro Leu Ser	Ile Thr	
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Leu Val Leu	Arg Leu Met Leu Leu	Ala Ser Lys Gly Asp	Asp Pro	
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Glu Asp Thr	Lys Ala L ys Val Leu	Ser Val Leu Lys His	Ser Leu	
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Phe Leu Phe	Ser Leu Gln Phe Leu	Val Lys Gl u Gly Tyr	Leu Asp	
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Gln Glu Gly	Asn Pro Met Gly Phe	Ala Gly Leu Val Ser	His Leu	
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Lys His Phe	Ser Gln A sp Val Met	Glu Lys Leu Val Leu	Val Leu	
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Ala His Leu	Phe Gly Arg Arg Tyr	Phe Pro Pro Lys Phe	Gln Asp	
1490	1495	1500		
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Pro Glu Asp	Phe Ser A sp Ala Leu	Asp Glu Tyr Asn Met	Lys Ile	
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Met Glu Asp	Phe Thr T hr Phe Leu	Arg Ile Val Ser Lys	Leu Ala	
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Thr Gly Lys	Glu Cys G lu Asp Ser	Gln Leu Val Ser His	Leu Met	
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Ser Cys Lys	Glu Gly Arg Val Ala	Ile Ser Pro Phe Val	Cys Leu	
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Val Leu Leu	Ser Gln L ys Phe Asp	Asn Arg Gl y Arg Lys	Met Ser	
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Gly Leu Val	Gln Asp A sn Arg Met	Asn Glu Gl y Asp Ala	Tyr Tyr	
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1700	1705	1710		

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&lt;211&gt; 1712

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

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Phe	Val	Glu	Ser	Glu	Phe	Phe	Leu	Ile	Asp	Gly	Asp	Ser	Leu	Leu	Ile
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Thr	Cys	Ile	Cys	Glu	Ile	Ser	Phe	Lys	Pro	Gly	Gln	Asn	Leu	His	Phe
					50			55				60			

Phe	Tyr	Leu	Val	Glu	Arg	Tyr	Leu	Val	Asp	Leu	Ile	Ser	Lys	Gly	Gly
					65			70			75			80	

Gln	Phe	Thr	Ile	Val	Phe	Phe	Lys	Asp	Ala	Glu	Tyr	Ala	Tyr	Phe	Asn
					85			90				95			

Phe	Pro	Glu	Leu	Leu	Ser	Leu	Arg	Thr	Ala	Leu	Ile	Leu	His	Leu	Gln
					100			105				110			

Lys	Asn	Thr	Thr	Ile	Asp	p	Val	Arg	Thr	Thr	Phe	Ser	Arg	Cys	Leu	Ser
					115			120				125				

Lys	Glu	Trp	Gly	Ser	Phe	Leu	Glu	Glu	Ser	Tyr	Pro	Tyr	Phe	Leu	Ile
					130			135			140				

Val	Ala	Asp	Glu	Gly	Leu	Asn	Asp	Leu	Gln	Thr	Gln	Leu	Phe	Asn	Phe
					145			150			155			160	

Leu Ile Ile His Ser Trp Ala Arg Lys Val Asn Val Val Leu Ser Ser  
165 170 175

Gly Gln Glu Ser Asp Val Leu Cys Leu Tyr Ala Tyr Leu Leu Pro Ser  
180 185 190

Met Tyr Arg His Gln Ile Phe Ser Trp Lys Asn Lys Gln Asn Ile Lys  
195 200 205

Asp Ala Tyr Thr Thr Leu Leu Asn Gln Leu Glu Arg Phe Lys Leu Ser  
210 215 220

Ala Leu Ala Pro Leu Phe Gly Ser Leu Lys Trp Asn Asn Ile Thr Glu  
225 230 235 240

Glu Ala His Lys Thr Val Ser Leu Leu Thr Gln Val Trp Pro Glu Gly  
245 250 255

Ser Asp Ile Arg Arg Val Phe Cys Val Thr Ser Cys Ser Leu Ser Leu  
260 265 270

Arg Met Tyr His Arg Phe Leu Gly Asn Arg Glu Pro Ser Ser Gly Gln  
275 280 285

Glu Thr Glu Ile Gln Gln Val Asn Ser Asn Cys Leu Thr Leu Gln Glu  
290 295 300

Met Glu Asp Leu Cys Lys Leu His Cys Leu Thr Val Val Phe Leu Leu  
 305 310 315 320

His Leu Pro Leu Ser Glu Arg Ala Cys Ala Arg Val Ile Thr Ser His  
325 330 335

Trp Ala Glu Asp Met Lys Pro Leu Leu Gln Met Lys Lys Trp Cys Glu  
340 345 350

Tyr Phe Ile Leu Arg Asn Ile His Thr Phe Glu Phe Trp Asn Leu Asn  
355 360 365

Leu Ile His Leu Ser Asp Leu Asn Asp Glu Leu Leu Leu Lys Asn Ile  
370 375 380

Ala Phe Tyr Tyr Glu Asn Glu Asn Val Lys Gly Leu His Leu Asn Leu  
385 390 395 400

Gly Asp Thr Ile Met Lys Asp Tyr Glu Tyr Leu Trp Asn Thr Val Ser  
405 410 415

Lys Leu Val Arg Asp Phe Glu Val Gly Gln Pro Phe Pro Leu Arg Thr  
420 425 430

Thr Lys Val Cys Phe Leu Gly Lys Lys Pro Ser Pro Ile Lys Asp Ser  
 435 440 445

Ser Asn Glu Met Val Pro Asn Leu Gly Phe Ile Pro Thr Ser Ser Phe  
 450 455 460

Val Val Asp Lys Phe Ala Gly Asp Ile Leu Lys Asp Leu Pro Phe Leu  
 465 470 475 480

Lys Ser Asp Asp Pro Ile Val Thr Ser Leu Val Lys Gln Lys Glu Phe  
 485 490 495

Asp Glu Leu Val His Trp His Ser His Lys Pro Leu Ser Asp Asp Tyr  
 500 505 510

Asp Arg Ser Arg Cys Gln Phe Asp Glu Lys Ser Arg Asp Pro Arg Val  
 515 520 525

Leu Arg Ser Val Gln Lys Tyr His Val Phe Gln Arg Phe Tyr Gly Asn  
 530 535 540

Ser Leu Glu Thr Val Ser Ser Lys Ile Ile Val Thr Gln Thr Ile Lys  
 545 550 555 560

Ser Lys Lys Asp Phe Ser Gly Pro Lys Ser Lys Lys Ala His Glu Thr  
 565 570 575

Lys Ala Glu Ile Ile Ala Arg Glu Asn Lys Lys Arg Leu Phe Ala Arg  
 580 585 590

Glu Glu Gln Lys Glu Glu Gln Lys Trp Asn Ala Leu Ser Phe Ser Ile  
 595 600 605

Glu Glu Gln Leu Lys Glu Asn Leu His Ser Gly Ile Lys Ser Leu Glu  
 610 615 620

Asp Phe Leu Lys Ser Cys Lys Ser Ser Cys Val Lys Leu Gln Val Glu  
 625 630 635 640

Met Val Gly Leu Thr Ala Cys Leu Lys Ala Trp Lys Glu His Cys Arg  
 645 650 655

Ser Glu Glu Gly Lys Thr Thr Lys Asp Leu Ser Ile Ala Val Gln Val  
 660 665 670

Met Lys Arg Ile His Ser Leu Met Glu Lys Tyr Ser Glu Leu Leu Gln  
 675 680 685

Glu Asp Asp Arg Gln Leu Ile Ala Arg Cys Leu Lys Tyr Leu Gly Phe  
 690 695 700

Asp Glu Leu Ala Ser Ser Leu His Pro Ala Gln Asp Ala Glu Asn Asp  
 705 710 715 720

Val Lys Val Lys Lys Arg Asn Lys Tyr Ser Ile Gly Ile Gly Pro Ala  
 725 730 735

Arg Phe Gln Leu Gln Tyr Met Gly His Tyr Leu Ile Arg Asp Glu Arg  
 740 745 750

Lys Asp Pro Asp Pro Arg Val Gln Asp Phe Ile Pro Asp Thr Trp Gln  
 755 760 765

Arg Glu Leu Leu Asp Val Val Asp Lys Asn Glu Ser Ala Val Ile Val  
 770 775 780

Ala Pro Thr Ser Ser Gly Lys Thr Tyr Ala Ser Tyr Tyr Cys Met Glu  
 785 790 795 800

Lys Val Leu Lys Glu Ser Asp Asp Gly Val Val Val Tyr Val Ala Pro  
 805 810 815

Thr Lys Ala Leu Val Asn Gln Val Ala Ala Thr Val Gln Asn Arg Phe  
 820 825 830

Thr Lys Asn Leu Pro Ser Gly Glu Val Leu Cys Gly Val Phe Thr Arg  
 835 840 845

Glu Tyr Arg His Asp Ala Leu Asn Cys Gln Val Leu Ile Thr Val Pro  
 850 855 860

Ala Cys Phe Glu Ile Leu Leu Leu Ala Pro His Arg Gln Asn Trp Val  
 865 870 875 880

Lys Lys Ile Arg Tyr Val Ile Phe Asp Glu Val His Cys Leu Gly Gly  
 885 890 895

Glu Ile Gly Ala Glu Ile Trp Glu His Leu Leu Val Met Ile Arg Cys  
 900 905 910

Pro Phe Leu Ala Leu Ser Ala Thr Ile Ser Asn Pro Glu His Leu Thr  
 915 920 925

Glu Trp Leu Gln Ser Val Lys Trp Tyr Trp Lys Gln Glu Asp Lys Ile  
 930 935 940

Ile Glu Asn Asn Thr Ala Ser Lys Arg His Val Gly Arg Gln Ala Gly  
 945 950 955 960

Phe Pro Lys Asp Tyr Leu Gln Val Lys Gln Ser Tyr Lys Val Arg Leu  
 965 970 975

Val Leu Tyr Gly Glu Arg Tyr Asn Asp Leu Glu Lys His Val Cys Ser  
 980 985 990  
 Ile Lys His Gly Asp Ile His Phe Asp His Phe His Pro Cys Ala Ala  
 995 1000 1005  
 Leu Thr Thr Asp His Ile Glu Arg Tyr Gly Phe Pro Pro Asp Leu  
 1010 1015 1020  
 Thr Leu Ser Pro Arg Glu Ser Ile Gln Leu Tyr Asp Ala Met Phe  
 1025 1030 1035  
 Gln Ile Trp Lys Ser Trp Pro Arg Ala Gln Glu Leu Cys Pro Glu  
 1040 1045 1050  
 Asn Phe Ile His Phe Asn Asn Lys Leu Val Ile Lys Lys Met Asp  
 1055 1060 1065  
 Ala Arg Lys Tyr Glu Glu Ser Leu Lys Ala Glu Leu Thr Ser Trp  
 1070 1075 1080  
 Ile Lys Asn Gly Asn Val Glu Gln Ala Arg Met Val Leu Gln Asn  
 1085 1090 1095  
 Leu Ser Pro Glu Ala Asp Leu Ser Pro Glu Asn Met Ile Thr Met  
 1100 1105 1110  
 Phe Pro Leu Leu Val Glu Lys Leu Arg Lys Met Glu Lys Leu Pro  
 1115 1120 1125  
 Ala Leu Phe Phe Leu Phe Lys Leu Gly Ala Val Glu Asn Ala Ala  
 1130 1135 1140  
 Glu Ser Val Ser Thr Phe Leu Lys Lys Lys Gln Glu Thr Lys Arg  
 1145 1150 1155  
 Pro Pro Lys Ala Asp Lys Glu Ala His Val Met Ala Asn Lys Leu  
 1160 1165 1170  
 Arg Lys Val Lys Lys Ser Ile Glu Lys Gln Lys Ile Ile Asp Glu  
 1175 1180 1185  
 Lys Ser Gln Lys Lys Thr Arg Asn Val Asp Gln Ser Leu Ile His  
 1190 1195 1200  
 Glu Ala Glu His Asp Asn Leu Val Lys Cys Leu Glu Lys Asn Leu  
 1205 1210 1215  
 Glu Ile Pro Gln Asp Cys Thr Tyr Ala Asp Gln Lys Ala Val Asp  
 1220 1225 1230

Thr Glu Thr Leu Gln Lys Val Phe Gly Arg Val Lys Phe Glu Arg  
 1235 1240 1245

Lys Gly Glu Glu Leu Lys Ala Leu Ala Glu Arg Gly Ile Gly Tyr  
 1250 1255 1260

His His Ser Ala Met Ser Phe Lys Glu Lys Gln Leu Val Glu Ile  
 1265 1270 1275

Leu Phe Arg Lys Gly Tyr Leu Arg Val Val Thr Ala Thr Gly Thr  
 1280 1285 1290

Leu Ala Leu Gly Val Asn Met Pro Cys Lys Ser Val Val Phe Ala  
 1295 1300 1305

Gln Asn Ser Val Tyr Leu Asp Ala Leu Asn Tyr Arg Gln Met Ser  
 1310 1315 1320

Gly Arg Ala Gly Arg Arg Gly Gln Asp Leu Met Gly Asp Val Tyr  
 1325 1330 1335

Phe Phe Asp Ile Pro Phe Pro Lys Ile Gly Lys Leu Ile Lys Ser  
 1340 1345 1350

Asn Val Pro Glu Leu Arg Gly His Phe Pro Leu Ser Ile Thr Leu  
 1355 1360 1365

Val Leu Arg Leu Met Leu Leu Ala Ser Lys Gly Asp Asp Pro Glu  
 1370 1375 1380

Asp Thr Lys Ala Lys Val Leu Ser Val Leu Lys His Ser Leu Leu  
 1385 1390 1395

Ser Phe Lys Gln Pro Arg Val Met Asp Met Leu Lys Leu Tyr Phe  
 1400 1405 1410

Leu Phe Ser Leu Gln Phe Leu Val Lys Glu Gly Tyr Leu Asp Gln  
 1415 1420 1425

Glu Gly Asn Pro Met Gly Phe Ala Gly Leu Val Ser His Leu His  
 1430 1435 1440

Tyr His Glu Pro Ser Asn Leu Val Phe Val Ser Phe Leu Val Asn  
 1445 1450 1455

Gly Leu Phe His Asp Leu Cys Gln Pro Thr Arg Lys Gly Ser Lys  
 1460 1465 1470

His Phe Ser Gln Asp Val Met Glu Lys Leu Val Leu Val Leu Ala  
 1475 1480 1485

His Leu Phe Gly Arg Arg Tyr Phe Pro Pro Lys Phe Gln Asp Ala  
 1490 1495 1500

His Phe Glu Phe Tyr Gln Ser Lys Val Phe Leu Asp Asp Leu Pro  
 1505 1510 1515

Glu Asp Phe Ser Asp Ala Leu Asp Glu Tyr Asn Met Lys Ile Met  
 1520 1525 1530

Glu Asp Phe Thr Thr Phe Leu Arg Ile Val Ser Lys Leu Ala Asp  
 1535 1540 1545

Met Asn Gln Glu Tyr Gln Leu Pro Leu Ser Lys Ile Lys Phe Thr  
 1550 1555 1560

Gly Lys Glu Cys Glu Asp Ser Gln Leu Val Ser His Leu Met Ser  
 1565 1570 1575

Cys Lys Glu Gly Arg Val Ala Ile Ser Pro Phe Val Cys Leu Ser  
 1580 1585 1590

Gly Asn Phe Asp Asp Asp Leu Leu Arg Leu Glu Thr Pro Asn His  
 1595 1600 1605

Val Thr Leu Gly Thr Ile Gly Val Asn Arg Ser Gln Ala Pro Val  
 1610 1615 1620

Leu Leu Ser Gln Lys Phe Asp Asn Arg Gly Arg Lys Met Ser Leu  
 1625 1630 1635

Asn Ala Tyr Ala Leu Asp Phe Tyr Lys His Gln Ser Leu Ile Gly  
 1640 1645 1650

Leu Val Gln Asp Asn Arg Met Asn Glu Gly Asp Ala Tyr Tyr Leu  
 1655 1660 1665

Leu Lys Asp Phe Ala Leu Thr Ile Lys Ser Ile Ser Val Ser Leu  
 1670 1675 1680

Arg Glu Leu Cys Glu Asn Glu Asp Asp Asn Val Val Leu Ala Phe  
 1685 1690 1695

Glu Gln Leu Ser Thr Thr Phe Trp Glu Lys Leu Asn Lys Val  
 1700 1705 1710